

## What is claimed is:

1. A method for estimating a resistance in at least one phase winding in a reluctance machine, the method comprising:

receiving a signal indicating a voltage across the at least one phase winding;

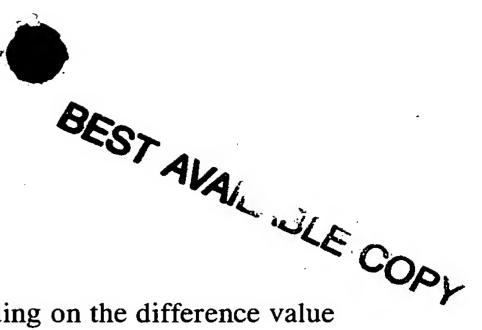
receiving a signal indicating a current through the at least one phase winding;

estimating a magnetic flux in response to the voltage signal and the current signal; and

estimating the resistance in the phase winding in accordance with a phase relation between the current signal and the magnetic flux estimate.

- 2. The method according to claim 1, further comprising: adjusting the magnetic flux estimation using the estimated resistance.
- 3. The method according to claim 1, further comprising: establishing a mutual position between a first and a second part of a reluctance machine in response to the current signal and the magnetic flux estimate.
- 4. The method according to claim 1, further comprising: establishing a current reference value in response to a torque reference value and the magnetic flux estimate.
- 5. The method according to claim 1, wherein the resistance estimation further comprises:

determining a relation or a difference value between the magnetic flux estimate and the current signal; and



adjusting the estimated resistance depending on the difference value or the relationship value.

- 6. The method according to claim 5, wherein the adjustment of the estimated resistance influences a subsequently produced magnetic flux estimate so that the absolute value of the difference value is minimized.
- 7. The method according to claim 5, wherein the adjustment of the estimated resistance comprises:

increasing the estimated resistance when the difference value has a first sign and reducing the estimated resistance when the difference value has a second sign.

8. The method according to claim 5, wherein the adjustment of the estimated resistance comprises:

determining a phase difference between the magnetic flux estimate and the current signal; or

determining an amplitude of the magnetic flux estimate at a predetermined amplitude level of the current signal.

- 9. The method according to claim 1 further comprising:
  generating a winding temperature value on a basis of said estimated resistance.
- 10. The method according to claim 9, wherein said winding temperature value is based on information including:

the phase winding resistance at a certain temperature; and a temperature coefficient for a material in said phase winding.

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11. A device for estimating a resistance in at least one phase winding in a reluctance machine, the device comprising:

an input for receiving a signal indicating a voltage across the at least one phase winding;

an input for receiving a signal indicating a current through the at least one phase winding;

a microprocessor; and

a memory having a computer program to direct the microprocessor to perform a process of estimating an instantaneous resistance wherein the microprocessor is coupled to the memory and to the signal inputs such that the microprocessor performs the process of estimating a magnetic flux in response to the voltage signal and the current signal, and estimating an instantaneous resistance in the phase winding in accordance with a phase relation between the current signal and the magnetic flux estimate during execution of the program.

- 12. A computer program product for use with a device according to claim 11, the computer program product comprising:
  - a recording medium;
- a computer program recorded on the recording medium to direct the microprocessor to perform the process set forth in claim 11.